

Scaled data based on original data using
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State
Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: NEO-RAY

Report Number: P331776-940

Luminaire Tested: **S122RDIW-S290D970U940-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P331776-940
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-8,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S122RDIW-S290D970U940-4F0-1E-UDD-F1
Description: DEFINE 2 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 290 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 970 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3917.5 lumens
Efficiency: N/A
Efficacy: 103.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular (W 0.17' x L: 4' x H: 0')
CIE Type: Semi-Indirect

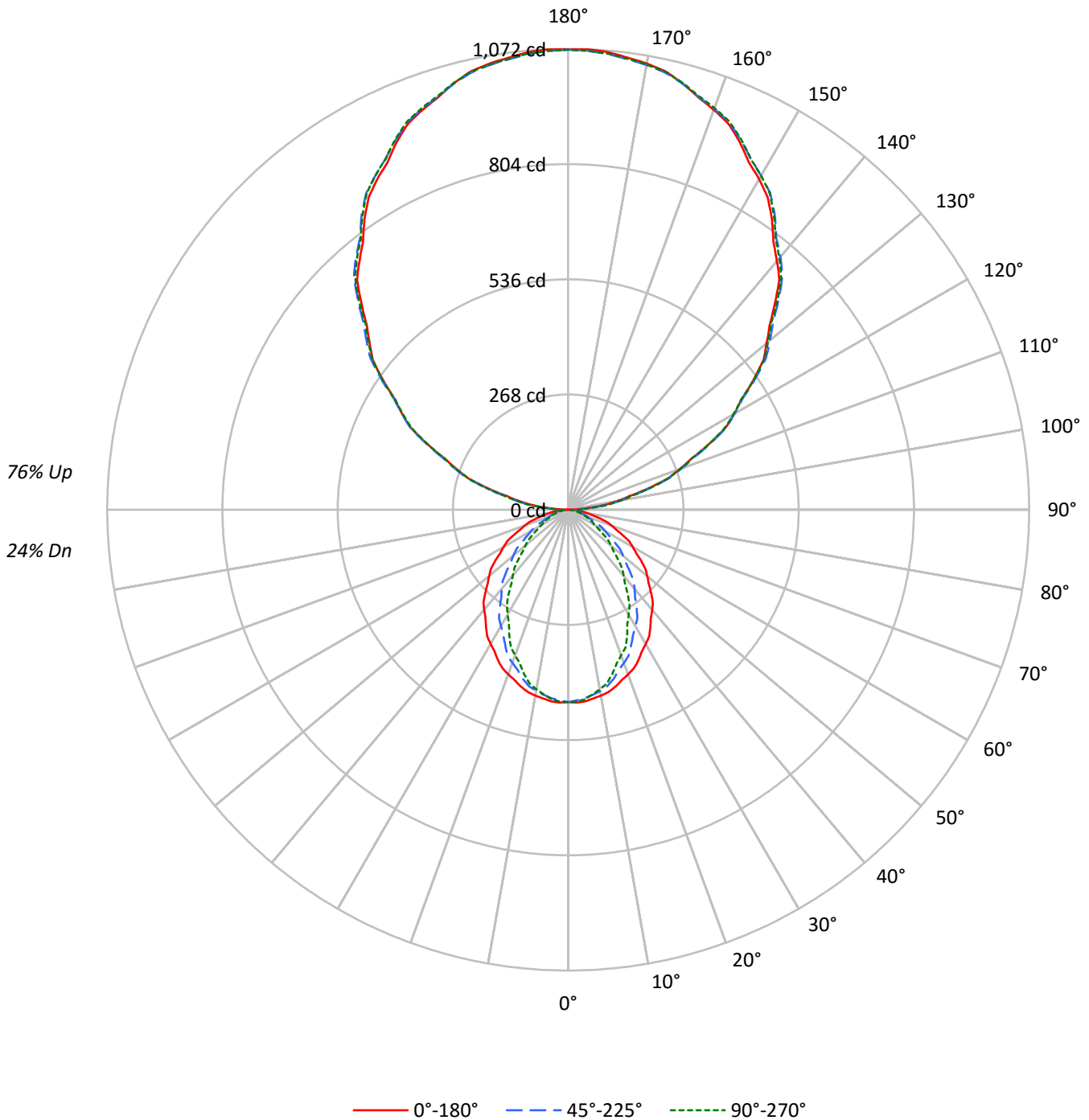
Input Watts (W): 38
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20	
RC	80				70				50				30				10	0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																		
0	101	101	101	101	90	90	90	90	69	69	69	49	49	49	32	32	32	24
1	92	88	84	81	82	78	75	73	60	58	57	44	43	41	28	28	27	20
2	84	77	71	66	74	69	64	60	53	50	47	39	37	35	25	24	23	17
3	77	68	61	56	68	61	55	50	47	43	40	34	32	30	23	21	20	15
4	70	60	53	47	62	54	47	43	42	37	34	31	28	26	20	19	17	13
5	64	53	46	40	57	48	41	36	37	33	29	28	25	22	18	17	15	11
6	59	48	40	35	52	43	36	32	34	29	25	25	22	19	17	15	14	10
7	55	43	36	30	48	39	32	28	30	26	22	23	19	17	15	13	12	9
8	51	39	32	27	45	35	29	24	28	23	20	21	18	15	14	12	11	8
9	47	35	28	24	42	32	26	22	25	21	18	19	16	14	13	11	10	7
10	44	32	26	21	39	29	23	19	23	19	16	17	14	12	12	10	9	7

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	7227	7227	7227
5°	7254	7136	7175
10°	7199	7020	6960
15°	7116	6812	6614
20°	7002	6515	6189
25°	6885	6178	5772
30°	6721	5830	5243
35°	6564	5454	4776
40°	6403	5063	4234
45°	6215	4624	3747
50°	6023	4182	3265
55°	5827	3704	2806
60°	5596	3203	2328
65°	5337	2690	2120
70°	5032	2219	1950
75°	4648	2021	1822
80°	4100	1804	1655
85°	3223	1426	1426



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	41.9	1.1
10°-20°	115.0	2.9
20°-30°	161.6	4.1
30°-40°	176.2	4.5
40°-50°	162.0	4.1
50°-60°	127.2	3.2
60°-70°	82.9	2.1
70°-80°	42.8	1.1
80°-90°	15.4	0.4
90°-100°	67.8	1.7
100°-110°	210.6	5.4
110°-120°	360.0	9.2
120°-130°	473.5	12.1
130°-140°	531.4	13.6
140°-150°	521.1	13.3
150°-160°	437.0	11.2
160°-170°	289.9	7.4
170°-180°	101.3	2.6
0°-30°	318.5	8.1
0°-40°	494.7	12.6
0°-60°	783.8	20.0
0°-90°	924.9	23.6
90°-120°	638.5	16.3
90°-150°	2164.4	55.2
90°-180°	2993.0	76.4
0°-180°	3917.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	448	448	448	448	448	
5°	448	445	440	444	443	42
15°	426	421	408	400	396	120
25°	386	373	347	331	324	178
35°	333	312	277	252	242	208
45°	272	244	202	175	164	210
55°	207	175	132	108	100	185
65°	140	107	70	57	56	138
75°	74	47	32	30	29	79
85°	17	9	8	8	8	21
90°	1	12	32	30	31	3
95°	47	56	58	58	56	54
105°	194	197	199	200	200	205
115°	361	366	365	364	361	357
125°	526	533	531	528	527	470
135°	680	690	692	691	688	525
145°	826	832	837	838	835	515
155°	944	946	949	953	951	434
165°	1027	1026	1026	1032	1028	289
175°	1068	1066	1064	1070	1065	101
180°	1070	1070	1070	1070	1070	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	447.6	447.6	447.6	447.6	447.6	447.6	447.6	447.6	447.6	447.6	447.6
2.5°	449.2	448.9	448.5	448.2	447.8	447.2	446.4	445.7	444.9	444.1	444.8
5°	447.6	447.2	446.7	446.3	445.9	445.0	443.8	442.6	441.5	440.3	441.1
7.5°	443.0	442.5	441.8	441.3	440.8	439.8	438.5	437.0	435.7	434.4	434.5
10°	439.1	438.5	437.8	437.2	436.6	435.3	433.5	431.8	430.0	428.2	427.9
12.5°	434.3	433.5	432.7	431.9	431.1	429.6	427.3	425.0	422.7	420.4	419.9
15°	425.7	424.7	423.7	422.8	421.8	419.7	416.7	413.7	410.5	407.5	405.8
17.5°	415.3	413.8	412.2	410.7	409.2	406.5	402.6	398.7	394.8	390.8	388.8
20°	407.5	405.7	403.9	402.1	400.3	397.2	392.6	388.2	383.7	379.2	376.9
22.5°	399.1	397.1	395.0	393.1	391.0	387.4	382.4	377.3	372.3	367.2	364.3
25°	386.5	383.5	380.7	377.8	375.0	370.5	364.5	358.6	352.7	346.8	343.0
27.5°	371.2	368.1	365.0	361.9	358.6	353.7	347.1	340.4	333.7	327.0	322.7
30°	360.5	357.1	353.7	350.3	346.9	341.5	334.3	327.2	319.9	312.7	308.2
32.5°	350.2	346.2	342.1	338.1	334.1	328.5	321.2	313.8	306.5	299.1	293.9
35°	333.0	328.4	323.8	319.2	314.6	308.4	300.4	292.5	284.6	276.7	271.0
37.5°	315.8	310.8	305.7	300.7	295.6	288.9	280.4	272.0	263.6	255.1	248.9
40°	303.8	298.5	293.0	287.6	282.2	275.2	266.4	257.7	249.0	240.2	233.8
42.5°	291.5	285.8	280.1	274.5	268.8	261.4	252.4	243.3	234.3	225.3	218.7
45°	272.2	266.2	260.1	254.1	248.1	240.3	230.9	221.4	212.0	202.5	196.2
47.5°	253.4	247.0	240.7	234.3	227.8	219.8	210.0	200.3	190.5	180.7	174.4
50°	239.8	233.4	227.0	220.6	214.3	206.1	196.2	186.3	176.4	166.5	160.2
52.5°	226.5	219.8	213.2	206.5	199.8	191.6	181.9	172.3	162.6	152.8	146.9
55°	207.0	200.0	193.0	185.9	178.9	170.6	160.8	151.1	141.3	131.6	126.3
57.5°	187.0	179.8	172.5	165.4	158.2	149.9	140.5	131.3	121.9	112.5	107.5
60°	173.3	166.2	159.0	151.8	144.5	136.3	127.1	117.8	108.5	99.2	94.6
62.5°	160.1	152.9	145.7	138.5	131.3	123.2	114.4	105.6	96.8	87.9	83.6
65°	139.7	132.4	125.2	117.9	110.6	102.9	94.8	86.7	78.6	70.4	67.4
67.5°	120.1	112.9	105.7	98.4	91.2	83.9	76.6	69.4	62.1	54.8	53.3
70°	106.6	99.5	92.5	85.5	78.5	71.9	65.6	59.4	53.2	47.0	46.1
72.5°	93.5	86.9	80.1	73.4	66.6	60.8	55.8	50.8	45.8	40.8	40.0
75°	74.5	68.2	62.0	55.6	49.3	44.7	41.6	38.5	35.5	32.4	31.7
77.5°	55.8	50.3	44.8	39.2	33.7	30.2	28.7	27.3	25.8	24.3	24.0
80°	44.1	39.6	35.0	30.4	25.8	23.0	22.1	21.2	20.3	19.4	19.1
82.5°	33.4	29.9	26.3	22.7	19.2	17.0	16.4	15.8	15.2	14.6	14.4
85°	17.4	15.5	13.6	11.8	9.9	8.7	8.5	8.2	7.9	7.7	7.7
87.5°	5.4	5.3	5.2	5.1	5.0	5.4	6.2	7.1	8.0	8.9	8.7
90°	0.9	3.3	5.7	8.1	10.5	13.9	18.4	22.7	27.2	31.6	31.2
92.5°	16.1	17.8	19.6	21.4	23.2	24.5	25.6	26.7	27.6	28.7	28.8
95°	47.0	49.0	51.0	53.0	55.0	56.2	56.6	57.0	57.4	57.8	57.8
97.5°	85.8	87.6	89.3	91.1	92.8	94.2	94.9	95.7	96.4	97.2	97.2
100°	114.7	116.3	117.9	119.5	121.1	122.3	122.8	123.4	124.0	124.7	124.7
102.5°	145.1	146.3	147.6	148.9	150.2	151.2	151.9	152.8	153.5	154.3	154.4
105°	194.2	194.7	195.4	196.0	196.6	197.1	197.5	197.9	198.3	198.7	199.1
107.5°	243.7	244.6	245.4	246.3	247.2	247.6	247.6	247.6	247.6	247.6	247.8
110°	275.4	276.7	277.9	279.1	280.3	280.9	280.9	280.9	280.9	280.9	280.9



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	310.1	311.4	312.5	313.8	315.0	315.5	315.3	315.1	315.0	314.9	314.3
115°	361.2	362.5	363.6	364.9	366.0	366.5	366.0	365.7	365.2	364.9	364.7
117.5°	412.2	413.8	415.4	417.1	418.7	418.8	417.8	416.6	415.5	414.4	413.9
120°	446.2	447.8	449.4	451.0	452.6	452.6	451.0	449.4	447.8	446.2	446.2
122.5°	477.2	479.2	481.1	483.0	484.9	485.4	484.2	483.1	482.0	480.8	480.4
125°	525.7	527.4	529.2	531.1	532.9	533.5	532.9	532.3	531.6	531.1	530.5
127.5°	572.8	575.1	577.4	579.7	581.9	582.7	582.0	581.3	580.6	579.9	579.1
130°	602.4	605.0	607.6	610.3	612.9	613.9	613.6	613.1	612.8	612.3	612.0
132.5°	635.6	637.8	639.9	642.0	644.2	645.2	645.3	645.4	645.5	645.6	644.7
135°	680.1	682.3	684.5	686.7	688.9	690.2	690.6	691.0	691.4	691.8	691.6
137.5°	726.8	728.7	730.5	732.3	734.1	735.3	735.8	736.3	736.8	737.4	737.2
140°	755.0	756.9	758.7	760.5	762.2	763.7	764.7	765.7	766.7	767.7	767.7
142.5°	784.0	785.8	787.6	789.3	791.2	792.5	793.1	793.8	794.5	795.1	795.3
145°	825.5	826.9	828.3	829.7	831.2	832.4	833.7	834.8	836.1	837.2	837.4
147.5°	862.6	864.2	865.9	867.5	869.2	870.5	871.3	872.1	872.9	873.7	874.1
150°	887.8	889.0	890.2	891.4	892.6	893.7	894.5	895.3	896.1	896.9	897.4
152.5°	910.3	911.4	912.7	913.8	915.1	916.1	917.1	918.0	919.0	920.0	920.7
155°	943.8	944.4	945.0	945.7	946.2	946.8	947.4	948.1	948.6	949.2	950.2
157.5°	972.5	972.9	973.3	973.7	974.1	974.6	974.9	975.3	975.6	976.0	977.3
160°	989.9	990.2	990.7	991.0	991.5	991.8	992.0	992.2	992.4	992.6	993.8
162.5°	1005.8	1005.8	1005.9	1006.0	1006.1	1006.2	1006.5	1006.7	1006.8	1007.0	1008.4
165°	1026.9	1026.7	1026.5	1026.3	1026.1	1026.0	1026.0	1026.0	1026.0	1026.0	1027.4
167.5°	1044.6	1044.0	1043.4	1042.8	1042.2	1041.9	1041.9	1041.8	1041.8	1041.7	1043.1
170°	1054.0	1053.4	1052.8	1052.2	1051.6	1051.2	1051.0	1050.8	1050.6	1050.4	1051.8
172.5°	1060.5	1059.9	1059.3	1058.7	1058.1	1057.7	1057.5	1057.3	1057.1	1056.9	1058.3
175°	1068.4	1067.8	1067.3	1066.7	1066.0	1065.5	1065.1	1064.7	1064.3	1063.9	1065.3
177.5°	1071.7	1071.2	1070.8	1070.2	1069.8	1069.3	1069.1	1068.7	1068.4	1068.1	1069.1
180°	1070.2	1070.2	1070.2	1070.2	1070.2	1070.2	1070.2	1070.2	1070.2	1070.2	1070.2



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	447.6	447.6	447.6	447.6	447.6	447.6	447.6	447.6
2.5°	445.5	446.2	446.9	447.2	447.1	446.9	446.7	446.7
5°	441.9	442.7	443.5	443.8	443.5	443.3	443.0	442.7
7.5°	434.8	435.1	435.2	435.2	434.7	434.2	433.7	433.3
10°	427.7	427.4	427.1	426.7	426.1	425.6	425.1	424.5
12.5°	419.5	418.9	418.5	417.8	416.9	416.0	415.1	414.2
15°	404.1	402.3	400.6	399.4	398.5	397.5	396.6	395.7
17.5°	386.7	384.7	382.7	380.9	379.3	377.8	376.2	374.7
20°	374.7	372.4	370.1	368.0	366.0	364.1	362.1	360.2
22.5°	361.4	358.5	355.6	353.4	351.9	350.4	348.9	347.5
25°	339.4	335.6	332.0	329.5	328.1	326.7	325.4	324.0
27.5°	318.3	314.1	309.8	306.6	304.4	302.3	300.1	298.0
30°	303.5	299.0	294.4	290.9	288.4	286.0	283.6	281.2
32.5°	288.6	283.4	278.1	274.4	272.2	269.8	267.5	265.3
35°	265.4	259.7	254.0	250.1	248.2	246.2	244.2	242.3
37.5°	242.6	236.4	230.2	225.9	223.6	221.3	219.1	216.8
40°	227.5	221.1	214.6	210.3	207.9	205.6	203.2	200.9
42.5°	212.0	205.5	198.9	194.5	192.2	189.9	187.6	185.4
45°	189.8	183.3	177.0	172.7	170.6	168.4	166.2	164.1
47.5°	168.0	161.7	155.3	151.1	149.2	147.2	145.3	143.3
50°	154.1	147.8	141.6	137.6	135.7	133.8	131.9	130.0
52.5°	140.9	134.9	128.9	125.0	123.3	121.5	119.8	118.1
55°	120.8	115.5	110.0	106.5	104.8	103.1	101.4	99.7
57.5°	102.6	97.6	92.7	89.5	88.1	86.7	85.2	83.7
60°	90.1	85.5	80.9	77.8	76.4	75.0	73.6	72.1
62.5°	79.2	74.8	70.4	67.8	66.9	66.1	65.2	64.3
65°	64.4	61.3	58.2	56.5	56.3	56.0	55.7	55.5
67.5°	52.0	50.6	49.1	48.3	48.0	47.7	47.4	47.2
70°	45.2	44.3	43.4	42.8	42.4	42.0	41.6	41.3
72.5°	39.3	38.5	37.8	37.4	37.1	36.9	36.6	36.5
75°	31.1	30.5	29.9	29.5	29.4	29.3	29.2	29.2
77.5°	23.5	23.2	22.8	22.6	22.5	22.3	22.2	22.0
80°	18.7	18.4	18.0	17.8	17.8	17.8	17.8	17.8
82.5°	14.2	13.9	13.7	13.6	13.6	13.6	13.6	13.6
85°	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7
87.5°	8.6	8.5	8.3	8.3	8.3	8.3	8.4	8.4
90°	30.8	30.4	30.0	29.9	30.1	30.3	30.5	30.7
92.5°	28.9	29.0	29.1	29.1	29.2	29.2	29.2	29.2
95°	57.8	57.8	57.8	57.6	57.2	56.8	56.4	56.0
97.5°	97.2	97.2	97.2	97.2	97.1	97.1	97.0	97.0
100°	124.7	124.7	124.7	124.6	124.3	124.1	123.9	123.8
102.5°	154.6	154.7	154.9	154.9	154.7	154.4	154.3	154.1
105°	199.5	199.9	200.3	200.5	200.5	200.5	200.5	200.5
107.5°	248.0	248.2	248.3	247.9	247.0	246.0	245.1	244.2
110°	280.9	280.9	280.9	280.6	280.0	279.4	278.7	278.2



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	313.9	313.4	312.9	312.5	312.0	311.6	311.1	310.7
115°	364.4	364.3	364.1	363.6	363.1	362.5	361.9	361.2
117.5°	413.4	413.0	412.4	411.9	411.3	410.7	410.1	409.5
120°	446.2	446.2	446.2	445.9	445.2	444.7	444.1	443.4
122.5°	479.9	479.4	478.9	478.5	478.0	477.6	477.2	476.7
125°	529.9	529.2	528.7	528.2	528.1	527.9	527.6	527.4
127.5°	578.4	577.7	576.9	576.2	575.6	575.0	574.4	573.7
130°	611.5	611.2	610.7	610.1	609.3	608.5	607.7	606.9
132.5°	643.8	642.9	642.0	641.3	640.7	640.0	639.4	638.7
135°	691.4	691.3	691.0	690.6	690.0	689.4	688.8	688.2
137.5°	737.0	736.9	736.7	736.2	735.4	734.6	733.8	733.0
140°	767.7	767.7	767.7	767.3	766.5	765.7	764.9	764.1
142.5°	795.5	795.7	795.8	795.5	794.7	793.9	793.1	792.3
145°	837.7	837.9	838.0	837.8	837.0	836.2	835.4	834.6
147.5°	874.6	875.0	875.5	875.3	874.6	873.8	873.1	872.3
150°	898.0	898.7	899.3	899.3	898.7	898.0	897.4	896.9
152.5°	921.5	922.3	923.0	923.0	922.3	921.5	920.7	920.0
155°	951.3	952.3	953.2	953.4	952.9	952.3	951.6	951.0
157.5°	978.7	980.1	981.4	981.6	980.7	979.7	978.7	977.8
160°	995.0	996.2	997.4	997.6	996.8	996.0	995.2	994.4
162.5°	1009.8	1011.1	1012.5	1012.7	1011.7	1010.8	1009.8	1008.9
165°	1028.9	1030.2	1031.6	1031.8	1030.8	1029.8	1028.9	1027.8
167.5°	1044.6	1046.0	1047.3	1047.5	1046.5	1045.4	1044.4	1043.4
170°	1053.2	1054.6	1056.1	1056.1	1054.9	1053.7	1052.5	1051.3
172.5°	1059.7	1061.1	1062.5	1062.7	1061.4	1060.2	1059.0	1057.8
175°	1066.8	1068.2	1069.5	1069.7	1068.4	1067.3	1066.0	1064.9
177.5°	1070.1	1070.9	1071.9	1071.9	1070.9	1070.1	1069.1	1068.1
180°	1070.2	1070.2	1070.2	1070.2	1070.2	1070.2	1070.2	1070.2

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